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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,693	02/06/2002	Yutaka Nakazawa	8013-1005	5640
466	7590	11/18/2003	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			NGUYEN, DANNY	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/066,693

Applicant(s)

NAKAZAWA ET AL.

Examiner

Danny Nguyen

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 6, 8, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al (USPN 5,136,473) in view of Fong et al (USPN 5,069,683).

Regarding claim 1, Tsuchiya et al disclose an electric double layer capacitor (see fig. 4) having electrodes (20), which include activated carbon particles (e.g. see col. 5, lines 20-21) and a binder binding the activated carbon particles (e.g. col. 1, lines 31-32), wherein a density of the electrodes is in range 0.64 g/cm<sup>3</sup> (col. 5, lines 47-48). Tsuchiya et al do not disclose the density of the electrodes as claimed. Fong et al disclose a battery cell is read on the electric double layer capacitor (see fig. 1) comprises a density of electrodes (20) is in range of 0.2 g/cm<sup>3</sup> to 2.0 g/cm<sup>3</sup> (see col. 12, lines 64-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the density of electrodes of Tsuchiya et al to incorporate the density of the electrodes having the range from 0.2 to 2.0 g/cm<sup>3</sup> as taught by Fong et al in order to improve energy density in the double layer capacitor circuit.

Regarding claims 6 and 11, Tsuchiya et al disclose an electric double layer capacitor (see fig. 4) comprises a separator (40), a pair of electrodes (20) separated by the separator, the electrodes including activated carbon particles and a binder binding the particles (e.g. see col. 5, lines 20-21 and col. 1, lines 31-32), a pair of collectors (50) separated by the electrodes (20), wherein a density of the electrodes is in range 0.64 g/cm<sup>3</sup> (col. 5, lines 47-48). Tsuchiya et al do not disclose the density of the electrodes as claimed. Fong et al disclose a battery cell is read on the double layer capacitor (see fig. 1) comprises a density of electrodes (20) is in range of 0.2 g/cm<sup>3</sup> to 2.0 g/cm<sup>3</sup> (see col. 12, lines 64-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the density of electrodes of Tsuchiya et al to incorporate the density of the electrodes having the range from 0.2 to 2.0 g/cm<sup>3</sup> as taught by Fong et al in order to improve energy density in the double layer capacitor circuit.

Regarding claims 3, 8, and 13, Tsuchiya et al disclose a diameter of the activated carbon particles is in the range of 5 to 13 micrometers and a particle size is in range of 2 to 20 micrometers (e.g. col. 5, lines 21-23).

2. Claims 2, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al in view of Fong et al and further in view of Andelman (USPN 6,127,474). The combination of Tsuchiya et al and Fong disclose the specific resistance of the electrodes (20) is 1.4 ohm.cm, but Tsuchiya et al and Fong et al do not disclose the electrodes have the specific resistance as claimed. Andelman discloses an

electrode has a specific resistance in the range of 1 to 10 ohm.cm (see col. 7, lines 21-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the specific resistance of electrodes of Tsuchiya et al and Fong et al to incorporate the specific resistance as taught by Andelman in order to improve tensile strength of electrodes (col. 2, lines 10-13).

3. Claims 4, 5, 9, 10, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al in view of Fong et al and further in view of Gan et al (USPN 6,171,729). The combination of Tsuchiya et al and Fong disclose a binder for binding the activated carbon particles, but do not disclose the binder as claimed. Gan et al disclose a double layer capacitor circuit comprise a binder that contains materials such as fluoro-polymer and polyvinylidene fluoride (e.g. see col. 4, lines 14-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the binder Tsuchiya et al and Fong et al to incorporate the binder that contains materials such as fluoro-polymer and polyvinylidene fluoride as taught by Gan et al in order to improve conductivity.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (703)-305-5988. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703)-308-3119. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

DN

DN

November 14, 2003

A handwritten signature in black ink, appearing to read 'B. Sircus', with a stylized flourish at the end.

**BRIAN SIRCUS**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**